

Application No. 09/842,370

Filed: April 25, 2001

TC Art Unit: 2172

Confirmation No.: 6576

AMENDMENTS TO THE CLAIMS

B1 1. (currently amended) An apparatus for managing data corresponding to a plurality of reticles in a semiconductor manufacturing system ~~including a plurality of processing stages, the apparatus comprising:~~

a central reticle database configured and arranged to store data associated with ~~each of the~~ plurality of reticles;

a reticle management controller communicably coupled to the central reticle database, the reticle management controller configured and arranged to store data in the central reticle database, and to retrieve data from the central reticle database; and

a stocker including ~~a stocker controller, a stocker database, a stocker controller communicably coupled to the stocker database and communicably coupled to the reticle management controller, and~~ a plurality of storage locations configured and arranged to store at least one of the plurality of reticles, ~~the stocker controller coupled to the stocker database, the stocker controller being~~ configured and arranged to store at least a portion of the ~~plurality~~ data corresponding to the at least one of the plurality of reticles stored within the plurality of storage locations within the stocker database, ~~and~~

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wherein the data associated with the plurality of reticles includes first and second data, portions of the first data being associated with respective ones of the plurality of reticles, and portions of the second data being associated with more than one of the plurality of reticles,

wherein the reticle management controller coupled to the stocker controller, the reticle management controller is configured and arranged to retrieve at least a portion of the first and second data stored within the central reticle database corresponding to each of the at least one reticles stored within the plurality of storage locations and to provide the retrieved data portion to the stocker controller, wherein the stocker controller being configured and arranged to stores-store the retrieved data portion within the stocker database, and

wherein the reticle management controller is further configured and arranged to manipulate and to maintain the plurality of reticles based on one or more portions of the second data associated with more than one of the plurality of reticles.

2. (currently amended) The apparatus of claim 1 wherein the portions of the first data corresponding to each of the plurality

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of reticles stored in the central reticle database includes a plurality of reticle identifying data.

3. (original) The apparatus of claim 2 wherein the plurality of reticle identifying data includes:

an attribute identifying the reticle;

an attribute identifying the location of the reticle.

4. (original) The apparatus of claim 3 wherein the plurality of reticle identifying data further includes:

an attribute identifying a reticle carrier housing the reticle;

an attribute identifying a the date and time the reticle was entered into use; and

an attribute identifying a user identifier who created the reticle.

5. (currently amended) The apparatus of claim 1 wherein the portions of the first data corresponding to each of the plurality of reticles stored in the central reticle database includes a plurality of reticle history data.

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6. (currently amended) The apparatus of claim 1 wherein the portions of the first data corresponding to each of the plurality of reticles stored in the central reticle database includes a plurality of reticle history data ~~includes~~including:

an attribute identifying the number of times the reticle has been retrieved;

an attribute identifying the date the reticle was last retrieved;

an attribute identifying the number of times the reticle has been stored; and

an attribute identifying the date the reticle was last stored.

7. (currently amended) The apparatus of claim 1 wherein the portions of the first data corresponding to each of the plurality of reticles stored in the central reticle database includes a plurality of reticle history data ~~further includes~~including:

an attribute identifying a user identifier who last selected the reticle; and

an attribute identifying a user identifier who last stored the reticle.

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8. (currently amended) The apparatus of claim 1 wherein the portions of the first data corresponding to each of the plurality of reticles stored in the central reticle database includes a plurality of reticle maintenance data.

9. (currently amended) The apparatus of claim 8 wherein the portions of the first data corresponding to each of the plurality of reticles stored in the central reticle database includes ~~a~~ the plurality of reticle maintenance data ~~includes~~ including:

an attribute identifying the number of times the reticle has been cleaned;

an attribute identifying the date on which the reticle was last cleaned;

an attribute identifying the number of times the reticle was inspected; and

an attribute identifying the date on which the reticle was last inspected.

10. (original) The apparatus of claim 9 wherein the plurality of reticle maintenance data further includes:

an attribute identifying a user identifier who last cleaned the reticle;

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an attribute identifying a location where the reticle was last cleaned;

an attribute identifying a user identifier who last inspected the reticle; and

an attribute identifying a location where the reticle was last inspected.

11. (currently amended) The apparatus of claim 1 further including:

a central system database configured and arranged to store portions of the second data corresponding to the system requirements of the plurality of reticles, and

wherein the reticle management controller is communicably coupled to the central system database, the reticle management controller being configured and arranged to store and to retrieve the system data from the central system database.

12. (currently amended) The apparatus of claim 11 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum number of cleanings of a reticle;

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an attribute identifying the maximum number of inspections of a reticle;

an attribute identifying the maximum number of uses of a reticle between inspections; and

an attribute identifying the maximum number of uses of a reticle between cleaning.

13. (currently amended) The apparatus of claim 11 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum time between inspections of a bare reticle; and

an attribute identifying the maximum time between cleanings of a bare reticle.

14. (currently amended) The apparatus of claim 11 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum time between inspections of a kitted reticle; and

an attribute identifying the maximum time between cleanings of a kitted reticle.

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15. (currently amended) The apparatus of claim 1 further including a plurality of stockers, each of the plurality of stockers including a stocker controller communicably coupled to the reticle management controller, a stocker database, and a plurality of storage locations configured and arranged to store at least one of the plurality of reticles, the stocker controller configured and arranged to collect at least a portion of the ~~plurality first and second data, corresponding to each of the at least one of the plurality of reticles stored within the plurality of storage locations~~ and to store the at least a portion of the first and second data within the stocker database, ~~and~~ wherein the reticle management controller coupled to each of the plurality of stocker controllers, the reticle management controller is configured and arranged to receive at least a portion of the first and second data from each of the plurality of stocker controllers, and to provide at least a portion of the first and second data to each of the plurality of stocker controllers, at least a portion of the plurality data corresponding to each of the at least one of the plurality of reticles stored within the plurality of storage locations corresponding to each of the plurality of stockers.

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16. (currently amended) An apparatus for managing a plurality of reticles in a semiconductor manufacturing system ~~including a plurality of processing stages, the apparatus comprising:~~

a central reticle database configured and arranged to store data corresponding to ~~each of the~~ plurality of reticles;

a reticle management controller communicably coupled to the central reticle database, the reticle management controller configured and arranged to store data in the central reticle database, and to retrieve data from the central database;

a stocker unit including ~~a stocker controller~~, a stocker database, a stocker controller communicably coupled to the stocker database and communicably coupled to the reticle management controller, and a plurality of storage locations configured and arranged to store at least one of the plurality of reticles,

wherein the data corresponding to the plurality of reticles includes first and second data, portions of the first data corresponding to respective ones of the plurality of reticles, and portions of the second data corresponding to more than one of the plurality of reticles,

wherein the reticle management controller is coupled to the stocker controller, ~~the reticle management controller configured~~

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WEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVITZ LLP
TEL. (617) 542-2290
FAX. (617) 451-0713

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and arranged to retrieve at least a portion of the first and second data stored within the central reticle database ~~corresponding to each of the at least one reticles stored within the plurality of storage locations~~ and to provide the retrieved data portion to the stocker controller, ~~wherein~~ the stocker controller being configured and arranged to stores store the retrieved data portion within the stocker database; and

a reticle moving system communicably coupled to the reticle management controller, the reticle moving system being configured and arranged to load a reticle at the a respective stocker unit and to deliver the loaded reticle to a destination; and

~~wherein the reticle management controller coupled to the reticle moving system~~, the reticle management controller is configured and arranged to provide one or more move commands to the reticle move system, the reticle move system being configured and arranged to receive the one or more move commands and being operative to execute the one or more move commands.

17. (currently amended) The apparatus of claim 16 wherein the ~~stocker unit is a first stocker unit, and wherein one or more move command commands~~ includes a command to store at a second stocker

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~~unit the a reticle currently stored at a first stocker unit at a second stocker unit.~~

18. (currently amended) The apparatus of claim 16 wherein the one or more move command commands includes a command to retrieve the a reticle from a ~~second~~ respective stocker unit.

19. (currently amended) The apparatus of claim 16 wherein the one or more move command commands includes a command to retrieve the a reticle from a ~~second~~ respective stocker unit, to move the reticle to the a first stocker unit different from the respective stocker unit, and to store the reticle at the first stocker unit.

20. (currently amended) An apparatus for managing data corresponding to a plurality of reticles in a semiconductor manufacturing system ~~including a plurality of processing stages, the apparatus comprising:~~

a central reticle database configured and arranged to store data associated with ~~each of the~~ plurality of reticles; and

a reticle management controller communicably coupled to the central reticle database, the reticle management controller

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configured and arranged to store data in the central reticle database, and to retrieve data from the central reticle database,

wherein the data associated with the plurality of reticles includes first and second data, portions of the first data being associated with respective ones of the plurality of reticles, and portions of the second data being associated with more than one of the plurality of reticles.

21. (currently amended) The apparatus of claim 20 wherein the portions of the first data associated with the respective ones of the plurality of reticles ~~corresponding to each of the plurality of reticles stored in the central reticle database~~ includes a plurality of reticle identifying data.

22. (original) The apparatus of claim 21 wherein the plurality of reticle identifying data includes:

an attribute identifying the reticle; and

an attribute identifying the location of the reticle.

23. (original) The apparatus of claim 22 wherein the plurality of reticle identifying data further includes:

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an attribute identifying a reticle carrier housing the reticle;

an attribute identifying a the date and time the reticle was entered into use; and

an attribute identifying a user identifier who created the reticle.

24. (currently amended) The apparatus of claim 20 wherein the portions of the first data associated with the respective ones of the plurality of reticles ~~corresponding to each of the plurality of reticles stored in the central reticle database~~ includes a plurality of reticle history data.

25. (currently amended) The apparatus of claim 20 wherein the portions of the first data associated with the respective ones of the plurality of reticles ~~corresponding to each of the plurality of reticles stored in the central reticle database~~ includes a plurality of reticle history data ~~includes~~ including:

an attribute identifying the number of times the reticle has been retrieved;

an attribute identifying the date the reticle was last retrieved;

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an attribute identifying the number of times the reticle has been stored; and

an attribute identifying the date the reticle was last stored.

26. (currently amended) The apparatus of claim 20 wherein the portions of the first data associated with the respective ones of the plurality of reticles ~~corresponding to each of the plurality of reticles stored in the central reticle database~~ includes a plurality of reticle history data ~~further includes~~ including:

an attribute identifying a user identifier who last selected the reticle; and

an attribute identifying a user identifier who last stored the reticle.

27. (currently amended) The apparatus of claim 20 wherein the portions of the first data associated with the respective ones of the plurality of reticles ~~corresponding to each of the plurality of reticles stored in the central reticle database~~ includes a plurality of reticle maintenance data.

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28. (currently amended) The apparatus of claim 27 wherein the ~~data corresponding to each of the plurality of reticles stored in the central reticle database includes a plurality of reticle~~ maintenance data includes:

an attribute identifying the number of times the reticle has been cleaned;

an attribute identifying the date on which the reticle was last cleaned;

an attribute identifying the number of times the reticle was inspected; and

an attribute identifying the date on which the reticle was last inspected.

29. (original) The apparatus of claim 28 wherein the plurality of reticle maintenance data further includes:

an attribute identifying a user identifier who last cleaned the reticle;

an attribute identifying a location where the reticle was last cleaned;

an attribute identifying a user identifier who last inspected the reticle; and

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an attribute identifying a location where the reticle was last inspected.

30. (currently amended) The apparatus of claim 20 further including:

a central system database configured and arranged to store portions of the second data corresponding to ~~the~~ system requirements of the plurality of reticles, and

wherein the reticle management controller is communicably coupled to the central system database, the reticle management controller being configured and arranged to store and to retrieve the system data from the central system database.

31. (currently amended) The apparatus of claim 30 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum number of cleanings of a reticle;

an attribute identifying the maximum number of inspections of a reticle;

an attribute identifying the maximum number of uses of a reticle between inspections; and

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WEINGARTEN, SCHURGIN,
GAGNEBIN & LEBOVICI LLP
TEL. (617) 562-2290
FAX. (617) 451-0313

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an attribute identifying the maximum number of uses of a reticle between cleaning.

32. (currently amended) The apparatus of claim 30 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum time between inspections of a bare reticle; and

an attribute identifying the maximum time between cleanings of a bare reticle.

33. (currently amended) The apparatus of claim 30 wherein the portions of the second data corresponding to the system requirements of the plurality of reticles includes:

an attribute identifying the maximum time between inspections of a kitted reticle; and

an attribute identifying the maximum time between cleanings of a kitted reticle.